

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

THP

THP

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet of 2

Complete if Known						
Application Number	10/045,934					
Filing Date	October 19, 2001					
First Named Inventor	William H. Bushong					
Group Art Unit	<del>2838-</del> 1745					
Examiner Name	T. Parsons					
Attorney Docket Number	780396.91470					

		_		U.S. PATENT DOCU	JMENTS	
Examiner Initials*	Cite No.1	U.S. Patent I Number	Document Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
##		4,818,641		Ledenican	Apr. 4, 1989	429/61
7		5,026,615		Tucholski	Jun. 25, 1991	429/61
		5,405,715		Dawson et al.	Apr. 11, 1995	429/54
		5,609,972		Kaschmitter et al.	Mar. 11, 1997	429/54
		5,741,606		Mayer et al.	Apr. 21, 1998	429/53
		5,747,187		Byon	May 5, 1998	429/58
		6,018,286		Quinn et al.	Jan. 25, 2000	337/140
		6,069,551		Kalapodis et al.	May 30, 2000	337/140
•		6,078,244		Quinn et al.	Jun. 20, 2000	337/140
1		6,080,506		Davis et al.	n. 27, 2000يلو	429/6/
					1	
		<u></u>				
				1		
		l				

				FORE	IGN PATENT DOCUMENT	rs		
Examiner	Cite	F	oreign Patent Doo			Date of Publication of	Pages, Columns, Lines, Where Relevant	
Initials*	No.1	Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)	Applicant of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear	T <sub>6</sub>
	/							
								<u> </u>
		lacksquare		$\rightarrow$				—
		$\vdash$		-44	$\rightarrow$			+
				1		$\longleftarrow$		+
L		$\vdash$						+
						<del>                                     </del>		╁─
	_		<del></del>			<del> </del>		abla
		<del></del>				<del>!</del>	<del> </del>	_

4-17-2004 Date Examiner Thomas H. Parsons Considered Signature

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

<sup>1</sup> Unique citation designation number. 2 See attached Kinds of U.S. Patent Documents. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

MAR 1 2 2002

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of 2 2 Sheet

Complete if Known 10/045,934 **Application Number** October 19, 2001 Filing Date William H. Bushong **First Named Inventor** <del>2838</del> 1745 Group Art Unit T. Parsons **Examiner Name** Attorney Docket Number 780396.91470

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
P		Xiao Guang Yang et al., "Charge Performance of a Commercial Nickel Metal Hydride Traction Battery System, Journal of The Electrochemical Society, 148 (9) A 1023-A1028 (2001)	
	,		
		4-17-200	4
Examine Signature		Bas Thumus H. Paisms Date Considered 9-3-2003	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

<sup>&</sup>lt;sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

d to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

Under the Paperwork Reduction Act of 1995,

## **INFORMATION DISCLOSURE** STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet of

Co	omple e if Known						
Application Number 10/045,934							
Filing Date	October 19, 2001						
First Named Inventor	William H. Bushong						
Group Art Unit	<del>2838</del> . 1745,						
Examiner Name	T. Parsons						
Attorney Docket Number	780396.91470						

					U.S. PATENT DOCL	MENTS	
	Examiner Cite Initials No.1		U.S. Patent I	Cocument Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
THP			4,690,879		Huhndorff et al.	Sep. 1, 1987	429/61
""			4,756,983		Tucholski	Jul. 12, 1988	<b>५२</b> १/ <i>61</i>
			4,855,195		Georgopoulos et al.	Aug. 8, 1989	429/5 <i>4</i>
			4,871,553		Huhndorff	Oct. 3, 1989	429/61
			4,937,153		Huhndorff	Jun. 26, 1990	429/61
			4,975,341		Tucholski et al.	Dec. 4, 1990	429/62
			4,992,339		Georgopoulos	Feb. 12, 1991	429/70
			4,992,344		Coppers	Feb. 12, 1991	429/61
			5,057,382		Tucholski	Oct. 15, 1991	429/61
			5,188,909		Pedicini	Feb. 23, 1993	429/61 429/7
			5,418,082		Taki et al.	May 23, 1995	429/53
			5,691,073		Vu et al.	Nov. 25, 1997	429/7
			5,879,832		Vu et al.	Mar. 9, 1999	429/62
		1	5,985,479		Boolish et al.	Nov. 16, 1999	429/56
			5,998,051		Poirier et al.	Dec. 7, 1999	439/7
	•		6,063,518		Dewulf et al.	May 16, 2000	429/53
MP	1		6,083,639		McHugh et al.	Jul. 4, 2000	429/62
					_		
							•

		<u> </u>		FORE	IGN PATENT DOCUMENT	TS					
	Cite No. <sup>1</sup>	0	Cito		F	oreign Patent Do	cument	Name of Patentee or	Date of Publication of	Pages, Columns, Lines, Where Relevant	
Examiner nitials*		Office <sup>3</sup>	Number⁴	Kind Code <sup>5</sup> (if known)	Applicant of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear	Τ <sup>ε</sup>			
						·					
								╁			
								İ			
		<b>-</b>			$\rightarrow$			╀			
								+			
								I			
			<u>/</u>			ļ		╀			
						1		ᆂ			

Examiner Signature	Alasta Thomas Paisms	Date Considered	9-3-203	4/15/04

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

<sup>&</sup>lt;sup>1</sup> Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

Sheet

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of

Co	mplete if Known
Application Number	10/045,934
Filing Date	October 19, 2001
First Named Inventor	William H. Bushong
Group Art Unit	<del>2038</del> 1745
Examiner Name	T. Parsons
Attorney Docket Number	780396.91470

,	<del>2</del> :1						
Γ	ž.				U.S. PATENT DOCUM	MENTS	
Ā	<b>\$</b>	0.1-	U.S. Patent	Document	Name of Patentee or Applicant	Date of Publication of	Pages, Columns, Lines, Where Relevant
<b>⊗</b>	eminer litials	Cite No. <sup>1</sup>	Number	Kind Code <sup>2</sup> (if known)	of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear
₽E	A		5,903,136		Takahashi et al.	May 11, 1999	320/128
ΗP	7		6,104,165		Miyamoto et al.	Aug. 15, 200	320/125
HP	44		3,617,386		Bosben et al.	Nov. 02, 1971	136/107
Ė							
		/				/	
						[	
L							
L							
L							
L							
L							
L					/		
L				$\mathcal{A}_{\mathcal{A}}$			
L				/_			
L				_4_			
L		_		/			
L				<u></u>	<u></u>	_	

				,	FOR	EIGN PATENT DOCUMENT	S		
	Examiner Initials	Cite '	Office <sup>3</sup>	Foreign Patent Doc	ument Kind Code <sup>5</sup> ( <i>if known</i> )	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Tß
TIAP	1			2349284		AEA Technology plc	25.10.2000		
THP	4			WO 96/35253		Philips Electronics N.V.	07.11.1996		
THP	100			372094		Jiro Kosuga	15.11.1963		
• • •									$\Box$
									igspace
									igspace
			L						┷┩
									+
				1					┼╌┤

Date Examiner Thomas H. Parsons Considered Signature

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Sheet <u>1</u> of <u>2</u>

Form PTO-1449 (Rev. 2-88)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 780396.91470 SERIAL NO. 10/045,934

APPLICANT(S): Bushong et al.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)

FILING DATE: 10/19/2001

<del>283</del>8 1745

1			U.S. PA	TENT DOCUMENTS			
	* EXAMINER'S INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
THE	Al-	3,614,583	10/19/1971	Burkett et al. 320/5	_		7
		3,622,397	11/23/1971	Belove 136/178	ļ		
Ţ		3,775,661	11/27/1973	Frezzolini et al. 320/46	<u> </u>		
		4,025,696	05/24/1977	Tucholski et al. 439/61			
		4,028,478	06/07/1977	Tucholski 429/61	<b></b>	/	
		4,035,552	07/12/1977	Epstein 429/58	ļ	/	<u> </u>
Ī		4,959,604	09/25/1990	Cuesta 320/20	/		
		5,028,860	07/02/1991	Amano 320/23			
		5,508,598	04/16/1996	Al-Abassy 320/14	<u> </u>		
		5,541,496	07/30/1996	Simmonds 320/36			
		5,589,755	12/31/1996	Kaite et al. 320/21	$\perp / \perp$	-	
		5,637,981	06/10/1997	Nagai et al. 320/22	<u> </u>		
		5,721,480	02/24/1998	Morioka 320/30	1/		
L	A	5,747,969	05/05/1998	Tamai 320/141	<del>                                     </del>		
THP	At-	5,872,444	02/16/1999	Nagano et al. 320//06	1	<u> </u>	
			FOREIGN	PATENT DOCUMENTS			
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
THA	Bland	199926971 A1	03/16/2000	Australia			123 110
7117	1	09320562 A	12/12/1997	Japan (abstract)			
1111	- Office	03320302 A	12,12,1007				
_							
		OTHER DOC	UMENTS (Includin	ng Author, Title, Date, Pertinent	Pages, Et	c.)	*·
ŀ			. /				
Ī					•=		
ĺ	ļ						
Ī							
			_		4-17-	2004	
		Par	1 - 11	anama date considered 9	<b>7</b> 2		

EXAMINER: Initial if a citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. QBMAD\331890

Sheet 2 of 2

Form PTO-1449 (Rev. 2-88)

COTANT & TRAUERE

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

780396.91470

APPLICANT(S): Bushong et al.

SERIAL NO.

10/045,934

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

FILING DATE:

_	(Use several she	10/19	/2001	- <del>28</del>	<del>2838</del> 1745			
		U.S. P	ATENT DOCUMENTS				<b>1</b>	
* EXAMINER'S INITIAL	DOCUMENT NUMBER	DATE	NAME		CLASS	SUBCLASS	FILING I IF APPRO	DATE PRIAT
BA	5,905,362	05/18/1999	Nagano et al. 35	10/125		17	<u> </u>	
	6,008,620	12/28/1999	Nagano et al. 32	0/106		<u>/</u>		
	6,087,810	07/11/2000	Yoshida 320	1139	/	1	<u></u>	
4	6,118,254	09/12/2000	Faulk 320/	141				
Bh	6,366,057	04/02/2002	Nakatsuji 3⊋o/	153				
			-	_/				
				<u></u>		<del> </del>		
					ļ			
					ļ	<u> </u>		
					<u> </u>		-	
		/					ļ	
		/			_		ļ	
	/				ļ	1		
				<del></del>	L	<u> </u>		
<del></del>		FOREIGN	N PATENT DOCUMENT	rs			1	
	DOCUMENT NUMBER	DATE	COUNTRY	ĺ	CLASS	SUBCLASS	TRANSLA YES	ATION
								T
				<u> </u>				Π
	7							T
	OTHER DOC	UMENTS (Includi	ing Author, Title, Date,	. Pertinent	Pages, E	tc.)		
							`	
	<del>    /                                 </del>							
					4	-17-20	104	

in the way

Sheet <u>1</u> of <u>1</u>

Form PTO-1 (Rev. 2-88)		- P	S. DEPARTMENT OF CO	_	78039	6.9147	0 10/	™. 045,93	4
INI	ORMATION DISC	LOSURE STA	TEMENT	(3)		s): Busho			
	BY AP		O N	四岁	FILING DATE		GROUP		
	Ose several sir	eets II Tiecessalv	O THULL	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	10/19	/2001	- <del>28</del> 3	B 174	5
		U.S. P	TENT DOCUM	<b>NEST</b> S					
* EXAMINER'S INITIAL	DOCUMENT NUMBER	DATE	ALENT & TO	NAME		CLASS	SUBCLASS	FILING IF APPRO	DATE PRIATE
AF	4,943,497	07/24/1990	Oishi et al.	46	19/53		7	_	
k	5,705,290	01/06/1998	Azema	42	19/53				
	6,207,319	03/27/2001	Nam	429	1/163				
<b>+</b>	6,207,320	03/27/2001	Song et al.	499	/171				
pr	6,376,120	04/23/2002	Azema	429/	61	1			
				/					
		1							
		<del>                                     </del>							
L		FOREIGI	I PATENT DOC	UMENTS	1		<u> </u>		
	DOCUMENT NUMBER	DATE		DUNTRY		CLASS	SUBCLASS	TRANSLA	TION
		ļ <u>-</u>			$\longrightarrow$			YES	МО
									igspace
	OTHER DOC	UMENTS (Includi	ng Author, Title	e, Date, F	Pertinent i	Pages, Etc	c. <i>)</i>		
	OTHER DOC	UMENTS (Includi	ng Author, Title	e, Date, F	ertinent i	Pages, Etc	c. <i>)</i>		
			····						
	H/				4	1-17-2	.004		
			ams DATE CO			3-20			



Sheet <u>1</u> of <u>1</u>

Form PTO-1449 (Rev. 2-88)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO. 780396.91470

SERIAL NO.

10/045,934

APPLICANT(S): Bushong et al.

GROUP

FILING DATE: 10/19/2001

2838 1745

ون ن	XAMINER'S NITIAL	'	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING IF APPRO	DAT PRI/	
34	)				w. w					
7	<u></u>		OCUMENT NUMBER	FOREIGN	PATENT DOCUMENTS  COUNTRY	CLASS	SUBCLASS	TRANSLA		
			OCCUPENT NOMBER	DATE	COUNTRY	CEASS	SUBCLASS	YES	Ϊ	
				<u> </u>					L	
7	PSO		Carson, Jr		ng Author, Title, Date, Pert			er Sourc	e	
	7		Coyle et a	I., "Ultra-Fast Nehicles for Disa	lickel Cadmium Batterie bled Persons pages 8/1-	s Charger," 8/5 (1995)	New Devel	opments	;i	
				B., "Fast Charg nal pages 10-1	ge Termination Methods 8 (1994)	for NiCd an	d NiMH Bat	teries,"	_	
			Fujikawa, Kaoru, "The New Cylindrical Sealed Ni-Cd Battery, 250 AAP, and its Charger, ZLC 8.4-0.35T," Yuasa Jiho 61:35-41 (1986)							
			Gladstone Annual Po	et al., "Deman wer Sources C	d Pulse Charging for Nic onference, 1969 23:56-	kel-Cadmiu 59 (1969)	m Batteries,	," <u>Proc.</u>	_	
			Gutekunst Nickel Cad	, K., "Contribu Imium and lead	tion to the Examination Acid Batteries," <u>Caplus</u>	of Charging (2002)	Behavior of	f Sealed	_	
		-	Hoshino, k 63 (1991)		Charge Ni-Cd Battery"	National Ted	chnical Repo	ort 37:59	<b>-</b> }-	
			Juvinall, G Intersociet 887 (1974	y Energy Conv	legative-Limited Sealed ersion Engineering Conf	Nickel-Cadn erence Proce	nium Cell," eedings," pa	9 <sup>th</sup> ages 881	-	
			── Nickel-Cad	lmium Batteries	tion of Hermetically Sea s for Aircraft Application ry Project No. 8173 (19	s," <u>Contrac</u>	ance-Free, I t Report for	High Rate Air Forc	∍, <u>e</u>	
			Latner, N., 582 (1972		ger for Nickel-Cadmium I	Batteries," <u>F</u>	lealth Physi	<u>cs</u> 23:58	30	
					Characteristics of Seal nical Report 24:313-320		admium Rec	hargeabl	е	
					CA Quick Chargers for P <u>t</u> 24:393-398 (1978)	ortable VTR	and Color (	Camera,"	'	
			Proceeding Proceeding		liCd Battery Charger wit eenth International intell					
	4				an Ultra Fast Battery Ch 2:35-38 (1992)	narger with a	a ST6210 M	1icro-		
					ormance of a Commercia of the Electrochemical				0	
EXA	MINER		Bus	Thomas	H. DATE CONSIDERED	2-3	2003	4/17/20	0	